CLAIMS

1.   A method for dynamic bin allocation, the method comprising:

obtaining link performance data based on a plurality of test transmissions between two network elements, wherein the plurality of test transmissions utilize at least one transmission

5   mode in each of a plurality of frequency ranges; and

determining a desired transmission scheme, wherein each of the plurality of frequency ranges is designated for at least one of the at least one transmission mode based at least in part on the link performance data.

2.   The method according to claim 1, wherein

10   the link performance data are obtained for each of the plurality of frequency ranges; and

the desired transmission scheme is determined by identifying a desired transmission mode for each of the plurality of frequency ranges based at least in part on the link performance data.

3.   The method according to claim 2, wherein the test transmissions are based on the at least

15   one transmission mode.

4.   The method according to claim 1, wherein

the link performance data are obtained for each of a plurality of predetermined transmission schemes; and

the desired transmission scheme is selected from the plurality of predetermined

20   transmission schemes based at least in part on the link performance data.

5.   The method according to claim 4, wherein the test transmissions are based on the plurality of predetermined transmission schemes.

6.   The method according to claim 1 further comprising communicating the desired

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transmission scheme to at least one of the two network elements and continue communications between the two network elements based on the desired transmission scheme.

7. The method according to claim 1, wherein the plurality of frequency ranges are defined based on a discrete multi-tone (DMT) modulation.

5 8. The method according to claim 1, wherein the plurality of frequency ranges are defined based on an orthogonal frequency division multiplexing (OFDM) technology.

9. The method according to claim 1, wherein the link performance data comprise at least one of:

a data rate;

10 an error rate;

a signal-to-interference ratio; and

a signal-to-noise ratio.

10. The method according to claim 1, wherein the at least one transmission modes comprises at least one of:

15 a full duplex mode;

an upstream-only mode; and

a downstream-only mode.

11. The method according to claim 1, wherein the test transmissions are performed at a maximum transmission power for each of the plurality of frequency ranges.

20 12. The method according to claim 1, wherein the two network elements communicate over a digital subscriber line (DSL).

13. A system for dynamic bin allocation, the system comprising a first network element and a second network element, wherein each of the first network element and the second network

element comprises at least a processor module and a transceiver module that are coordinated to

obtain link performance data based on a plurality of test transmissions between the first

network element and the second network element, wherein the plurality of test transmissions

utilize at least one transmission mode in each of a plurality of frequency ranges; and

5   determine a desired transmission scheme, wherein each of the plurality of frequency

ranges is designated for at least one of the at least one transmission mode based at least in part on

the link performance data.

14.   The system according to claim 13, wherein

the link performance data are obtained for each of the plurality of frequency ranges; and

10   the desired transmission scheme is determined by identifying a desired transmission

mode for each of the plurality of frequency ranges based at least in part on the link performance

data.

15.   The system according to claim 13, wherein

the link performance data are obtained for each of a plurality of predetermined

15   transmission schemes; and

the desired transmission scheme is selected from the plurality of predetermined

transmission schemes based at least in part on the link performance data.

16.   A system for dynamic bin allocation, the system comprising:

means for obtaining link performance data based on a plurality of test transmissions

20   between two network elements, wherein the plurality of test transmissions utilize at least one

transmission mode in each of a plurality of frequency ranges; and

means for determining a desired transmission scheme, wherein each of the plurality of

frequency ranges is designated for at least one of the at least one transmission mode based at

least in part on the link performance data.

17. The system according to claim 16, wherein

the link performance data are obtained for each of the plurality of frequency ranges; and

the desired transmission scheme is determined by identifying a desired transmission

5   mode for each of the plurality of frequency ranges based at least in part on the link performance

data.

18. The system according to claim 16, wherein

the link performance data are obtained for each of a plurality of predetermined

transmission schemes; and

10   the desired transmission scheme is selected from the plurality of predetermined

transmission schemes based at least in part on the link performance data.

19. A computer readable medium having code for causing a processor to perform dynamic

bin allocation, the computer readable medium comprising:

code adapted to obtain link performance data based on a plurality of test transmissions

15   between the first network element and the second network element, wherein the plurality of test

transmissions utilize at least one transmission mode in each of a plurality of frequency ranges;

and

code adapted to determine a desired transmission scheme, wherein each of the plurality of

frequency ranges is designated for at least one of the at least one transmission mode based at

20   least in part on the link performance data.

20. The computer readable medium according to claim 19, wherein

the link performance data are obtained for each of the plurality of frequency ranges; and

the desired transmission scheme is determined by identifying a desired transmission

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mode for each of the plurality of frequency ranges based at least in part on the link performance

data.

21.   The computer readable medium according to claim 19, wherein

the link performance data are obtained for each of a plurality of predetermined

5   transmission schemes; and

the desired transmission scheme is selected from the plurality of predetermined

transmission schemes based at least in part on the link performance data.